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Garden State Council

Halgas Scout reservation Field Guide:

A guide to common native plants and animals of the New Jersey Pinelands found within Halgas Scout Reservation
“I am glad I will not be young in a future without wilderness”.

— Aldo Leopold,
A Sand County Almanac

“All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively the land”.

— Aldo Leopold,
The Land Ethic, A Sand County Almanac

“Ethical behavior is doing the right thing when no one else is watching- even when doing the wrong thing is legal”.

— Aldo Leopold,
The Land Ethic, A Sand County Almanac
**Outdoor Code**

As an American I promise to:

Be clean in my outdoor manner,
Be careful with Fire,
Be considerate in the outdoors, and
Be conservation minded.

**Scout Motto**

Be Prepared

**Scout Slogan**

Do a Good Turn Daily

**Scout Law**

A Scout is: Trustworthy, Loyal, Helpful, Friendly, Courteous, Kind, Obedient, Cheerful, Thrifty, Brave, Clean, and Reverent

**Scout Oath**

On my honor I will do my best
To do my duty to God and my country.
To obey the Scout Law.
To help other people at all times.
To keep myself physically strong,
mentally awake, and morally straight
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Halgas and The Land Ethic

Halgas Scout Reservation was created with the idea that visitors should be afforded the opportunity to learn about the environment and the community around them. Halgas offers a pristine setting within the Pinelands National Preserve which has been set aside for visitors to enjoy nature, in many ways, as wild as it was when the first settlers arrived.

Halgas offers 163 acres of Pine and Oak forest, hardwood swamp, and border area to the globally rare pygmy forest. Halgas offers Scouts an experience like no other in the region. Here, Scouts have the opportunity to observe nature in areas untouched by man.

Aldo Leopold, the conservationist responsible for creating The Land Ethic, wrote “I am glad I will not be young in a future without wilderness”. Visitors to Halgas Scout Ranch experience that wilderness minutes from the parking area. In order to protect that wilderness, each and every scout has the responsibility to treat the land with respect, acting as a member of the biotic community within Halgas. Every step visitors take, every action they commit impacts the land in some way. By practicing outdoor ethics, we can make responsible choices and preserve the wilderness for future children to explore and enjoy.

Leopold tells us, “Examine each question in terms of what is ethically and aesthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise”. Think of the community of living things surrounding you while visiting Halgas. Up from the organic soil under your feet, to the trees all around you, to the birds soaring above. Each choice we make has a direct as well as an indirect, or second and third order, effect. The dead tree that is pushed down and used for firewood may have been the home for an American Kestrel. That same tree would have eventually fallen down and been
decomposed into soil, adding critical nutrients to the extremely thin layer of organic soil. Nutrients that allow other plants to flourish.

In Aldo Leopold’s *A Sand County Almanac*, he writes “The last word in ignorance is the man who says of an animal or plant, "What good is it?" If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of eons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering”.

The Pinelands are home to many species of threatened and endangered species as well iconic American wildlife such as the Bald Eagle and the Black bear. Within Halgas, visitors will encounter many species of plants and animals, each of which play an important role in keeping the environment healthy.

This field book offers Scouts the opportunity to arrive at Halgas and know by name the members of the biotic community in which they are visiting. Visitors are encouraged to take pause in their activities, sit or stand in silence, and allow the forest to come alive around you.

Lastly, Leopold reminds us that when dealing in ethics, “ethical behavior is doing the right thing when no one else is watching- even when doing the wrong thing is legal”.

For information on how to enjoy this land responsibly, please read “Halgas Outdoor Ethics and Program Guide”.
Halgas Scout Reservation is located within the New Jersey Pinelands National Preserve. The Pinelands or Pine Barrens as they are commonly called contain various different forest types and habitat, ranging from wet swampy pine forests to the dry sandy pigmy forests of Bass River and Penn State Forests. Each forest type provides critical habitat for the many threatened and endangered species living within the Pinelands.

Halgas Scout Reservation is situated in the Pine/Shrub Oak and Pitch Pine Lowlands Native Forest Types. The Pine/Shrub Oak forest type is found in the large, frequently burned fire-sheds of the central Pinelands, on low sandy terraces adjacent to pitch pine lowlands or other wetlands.

Characteristics of a Pine/Shrub Oak forest consist of typically 50 to 75 percent Pine cover of Pitch Pine or Shortleaf Pine. Tree-oak cover is absent or under five percent in most pine/shrub oak “barrens”, and five to 25 percent in pine/oak/shrub-oak “woodlands.” When present, tree-oak species often include black oak, post oak, scarlet oak, and rarely chestnut oak, white oak and southern red oak. Shrub-oak cover (blackjack oak or scrub-oak) is over five percent and is typically between 25 and 100 percent.

Low shrub cover is dominated by black huckleberry, low bush blueberry, greenbrier; and often includes early successional species such as bearberry, pixie moss, pine-barrens hudsonia, sandwort, Pennsylvania sedge, little bluestem, and lichens, especially where an open pine canopy is maintained.

Pitch Pine Lowlands are characterized as areas dominated by pitch pine and supporting one or more of the following hydrophytic plants (growing wholly or partially in water): Red maple, Blackgum, Gray birch, Leatherleaf, Dangleberry, Sheep laurel, Highbush blueberry, Sweet pepperbush, and Wintergreen.

Other plant species, to include native plants, are present at Halgas. These lists are simply characterizations of the forest types, not an all-inclusive list of identifiable species at the camp.

Halgas also contains various different habitats within these forest types. There are three intermittent streams flowing through the property as well as numerous small ponds. These bodies of water not only provide critical watering to larger wildlife, they also provide micro habitats for various species of aquatic life.

The wetland areas provide pools of water that are present long enough
for some amphibians to lay eggs and promote metamorphoses but dry up in late summer preventing the development of predatory fish populations. Vegetation surrounding these wetlands often includes tall grasses and mosses.
New Jersey Pinelands Non-Game Threatened and Endangered Species

<table>
<thead>
<tr>
<th>T – Threatened</th>
<th>E – Endangered</th>
<th>FE – Federally Threatened</th>
<th>FE – Federally Endangered</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Halgas provides habitat for species</td>
<td></td>
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</tbody>
</table>

**Birds**
- *Cooper’s Hawk T*
- *Northern Goshawk E*
- Henslow’s Sparrow E
- Grasshopper Sparrow T
- Short-eared Owl T (breeding population only)
- Long-eared Owl T
- Upland Sandpiper E
- *Red-shouldered Hawk E (breeding), T (nonbreeding)*
- American Bittern E
- Piping Plover E, FT
- *Northern Harrier E (breeding population only)*
- Sedge Wren E
- Bobolink T
- Peregrine Falcon E, Bald Eagle E, FT
- Loggerhead Shrike E
- Black Rail T
- *Red-headed Woodpecker T*
- *Black-crowned Night Heron T*
- Yellow-crowned Night Heron T
- Osprey T
- Savannah Sparrow T
- Pied-billed Grebe E (breeding population only) 2
- Vesper Sparrow E
- Black Skimmer E
- Least Tern E
- Roseate Tern E, FE
- *Barred Owl T*

**Reptiles**
- Wood Turtle T
- Bog Turtle E, FT
- *Timber Rattlesnake E*
- *Corn Snake E*
- *Northern Pine Snake T*

**Amphibians**
- Blue-spotted Salamander E
- *Eastern Tiger Salamander E*
- *Pine Barrens Tree frog T*
- *Southern Grey Tree frog E*
- Eastern Mud Salamander T

**Mammals**
- Bobcat E

**Invertebrates**
- Arogos Skipper (butterfly) E
- Northeastern Beach Tiger Beetle E, FT
- Silver-bordered Fritillary (butterfly) T
- Frosted Elfin (butterfly) T

Although not all species listed may be present at Halgas Scout Reservation, Scouts may encounter them while visiting neighboring state and federal land.

Within 30 miles of Halgas, most species on this list can be found due to the camp’s location between the
seashore and barrier islands and the White Cedar swamps of Bass River State Forest.

To find more information on New Jersey threatened and endangered species, Visit the New Jersey Department of Fish and Wildlife website using the following link: http://www.njfishandwildlife.com/ta ndespp.htm or search the New Jersey Endangered and Threatened Species Field Guide online at: http://www.conservewildlifenj.org/s pecies/fieldguide/

If at any time you spot a threatened or endangered animal, please report the sighting to the New Jersey Department of Fish and Wildlife using the following link: http://www.state.nj.us/dep/fgw/ens p/rprtform.htm.

Information on the location of rare animals helps build New Jersey’s Natural Heritage Inventory. The data collected will help develop critical habitat mapping, enable development of habitat and population trends, and ultimately help to develop conservation strategies for endangered and threatened species.
Animals of Halgas

The Pine Barrens National Preserve is home to 35 species of mammals. Apex predators like black bears, cougars and wolves have been greatly reduced in numbers or eliminated. However, black bears have been making a comeback in recent years. Smaller predators include coyotes, red and grey fox, mink, long-tailed weasel, southern bog lemming, river otter, raccoon, and muskrat. White tail deer, red and gray squirrels, chipmunks, voles, mice, and eight species of bats can also be found in the Pinelands.

Of the 144 species of birds which can be seen in the Pinelands, the raptors are among the most impressive. The bald eagle, red shouldered hawk, and osprey can all be seen soaring overhead or perched overlooking open woodland, grasslands, or ponds searching for prey. The Pinelands provide habitat for 100 species of birds including a vast assortment of waterfowl and songbirds.

The Pine Barrens are the stronghold habitat for the Pine Barrens Tree Frog. Aside from small populations in North and South Carolina as well as the Florida panhandle/Alabama area, this species can only be found within its namesake. The more common species of frogs seen in the Pinelands are the green frog and the southern leopard frog. The increase in residential building and farming, with the associated pollution, combined with the introduction of nonnative and invasive species has resulted in a decreased population of amphibious life. The Pine Barrens tree frog and the carpenter frog are seen as indicators of a healthy aquatic ecosystem when present throughout the Pinelands.

The Pinelands are home to roughly 20 species of snake, including the only poisonous snake native to New Jersey, the timber rattlesnake. Two snakes of significance which call the Pinelands home are the timber rattlesnake and the northern pine snake. Both species exist in isolation from other populations of their species. The nearest place the pine snake can be found is Virginia. The Timber Rattlesnake can be found again in the mountains of northern New Jersey. The eastern hognose snake is easily identified by its unusual snout. Although it shares a common name with the deadly snake found in Africa, the hognose snake, or puff adder in North America, is not venomous. It is called a puff adder because it flattens its neck similar to a cobra when threatened. The eastern hognose has been known to strike at humans, but it will not bite.

Streams within the Pine Barrens host a limited species of specially adapted
The acidic water limits the reproductive capability of most fish because it interferes with the viability of their eggs. The water sources at Halgas are composed of intermittent streams, small ponds, and hardwood swamps which mostly dry up following the wet season or freeze completely during the winter. Because of this, there are no fish populations within the waterways at Halgas Scout Reservation.

Of all the species living within the Pinelands, not all are present or common at Halgas. The following animals represent a cross section of those which visitors may find at Halgas or observe soaring overhead.

* Denotes species confirmed by author to be present at Halgas.

**Mammals**

- **Black Bear**  
  *Ursus americanus*

- **Coyote**  
  *Canis Latrans*

- **Eastern Chipmunk**  
  *Tamias Striatus*

- **Eastern Grey Squirrel**  
  *Sciurus Carolinensis*
Fauna

*Gray Fox
*Urocyon cinereoargenteus

*Raccoon
*Procyon lotor

*Red Squirrel
*Tamiasciurus hudsonicus

*White-footed Mouse
*Peromyscus Leucopus

*White Tail Deer
*Odocoileus virginianus

**Birds**

Bald Eagle
*Haliaeetus leucocephalus
Red Shouldered Hawk
* Buteo lineatus

Ruffed Grouse
* Bonasa umbellus

Turkey Vulture
* Cathartes aura

Wild Turkey
Meleagris gallopavo

Amphibians

Fowler's Toad
Bufo woodhousei fowleri

Pine Barrens Tree Frog
Hyla andersoni
Reptiles

*Black Rat Snake
*Elaphe obsolete

*Eastern Box Turtle
*Terrapene carolina

Northern Pine Snake
Pituophis melanoleucus

Timber Rattler
Crotalus horridus

Eastern Hognose Snake
Heterodon platyrhinos
Mammal Scat of North America

- small rats, mice, voles
- bats
- squirrels & chipmunks
- rabbits & hares
- porcupine
- marmot, woodchuck
- mink
- opossum
- raccoon
- skunk
- fox
- coyote
- beaver
- moose
- bobcat
- bear

Specimens shown twice actual size
Guide to Common Animal Tracks

**WHITE-TAILED DEER**
2 1/2 to 3"

**MOOSE**
4 1/2 to 5 1/2"

**DOG**
H - 2 1/4 to 4"
F - 2 1/2"

**COYOTE**
H - 2 1/4"

**RED FOX**
H - 2"
F - 2 1/4"

**GREY FOX**
H - 1 3/4"
F - 2"

**BOBCAT**
H - 1 7/8"
F - 4 1/4"

**LYNX**
H - 3"

**HOUSECAT**
1 to 2"

**OTTER**
1 1/2"

**FISHER**
2 1/4"

**MINK**
1"

**WEASEL**
1/2" to 1"

**TRACKS NOT TO SCALE**

Depending on the substrate (snow, mud, dust, sand, etc.) and the speed the animal was moving, tracks may show great variability in their appearance.
Common Native Plants of Halsgas

New Jersey is home to thousands of species of plants, an estimated 550 of which can be found within the boundaries of the Pinelands National Preserve. Witmer Stone (1866-1939), Ornithologist, author of *The Plants of Southern New Jersey with Especial Reference to the Flora of the Pine Barrens* (1911, and foremost authority on vegetation of the Pine Barrens during his life, estimated that only 386 were “true” Pine Barrens species. The remainder were present only because of the disturbances of man.

The following plant species are those listed by the State of New Jersey as “Native” and can be readily found within the boundaries of Halsgas Scout Reservation. Other plant species may be present or even plentiful throughout the property however not native to the Pine Barrens.

* Denotes species confirmed by author to be present at Halsgas.

**Trees**

*American Holly*  
*Ilex opaca*

Habitat: Dry and moist soil, understory  
Identification: Height 40’, crown narrow, rounded, dense. Leaves 3” long, elliptical, spiny-toothed, stiff, shiny, evergreen. Bark is light gray and smooth to warty. Fruit is ½” in diameter and berry like.

*Atlantic White Cedar*  
*Chamaecyparis thyoides*

Habitat: Wetlands. Damp to wet soils, in swamps or along watercourses.  
Identification: Height 60’, conical or rounded crown. Horizontal slender branches with dark blue green, tiny, overlapping scale-like leaves. Reddish brown shreddy bark, deeply furrowed. Tiny egg shaped purple-brown cones.
**Black Jack Oak**
*Quercus marilandica*

Habitat: Dry uplands
Identification: Height 20-50’ with open irregular crown of crooked spreading branches. Leaves 2 ½-5” long, 2-5” wide, slightly triangular in shape, broadcast near tip with 3 shallow broad bristle-tipped lobes, gradually narrowed to round at base. Shiny yellow-green above with light yellow-green beneath; turn brown or yellow in fall. Acorns 5/8-3/4” long, elliptical, ending in stout point 1/3-2/3 enclosed by deep thick overlapping loosely scaled cap.

**Blackgum**
*Nyssa sylvatica*

Habitat: moist soils, hardwood swamps, mixed forest
Identification: 50-100” with dense, conical or at times flat topped crown. Leaves are 2-5” in length elliptical or oblong, simple, un-toothed, shiny green above, paler underneath. Bark is grey or dark brown, thick, rough, deeply furrowed in rectangular or irregular ridges. Berrylike fruit 3/8-1/2” in diameter, elliptical, blue-black in color.

**Black Oak**
*Quercus velutina Lam.*

Habitat: Dry
Identification: Height 60’ with open spreading crown. Leaves 4-9” long, 3-6” wide with 7-9 lobes ending in a few bristle tipped teeth; shiny yellow-green above with paler yellow-green below; turn dull red or bronze in fall. Acorn 5/8-3/4” long elliptical, ½ enclosed by deep thick cap, fringed at boarder.
*Flora*

**Pitch Pine**  
*Pinus rigida*

Habitat: Uplands and wetlands. Sterile, sandy to rocky, acid soils.  
Identification: Height 50-60’ with broad, rounded, or irregular crown. Needles are evergreen, 3-5” long, 3 per bundle, often twisted. Cones 1 ¼-2 ⅛” long, egg shaped, yellow-brown, open at maturity but remain attached.

**Sassafras**  
*Sassafras albidum*

Habitat: Damp to dry woods, thickets, old fields.  
Identification: 30-60’ tree or thicket forming shrub with narrow, spreading crown of short, stout branches. Leaves 3-5” long, 1 ½-4” wide with 1, 2, or 3 lobed, shiny green top with paler green below; turn red, orange, yellow (various on same tree) in fall. Thick, furrowed gray brown bark. Fruit 3/8” long, elliptical bluish-black berry, each in red cup on long red stalk containing 1 seed.

**Scarlet Oak**  
*Quercus coccinea*

Habitat: Mixed forests in poor or sandy soil.  
Identification: 60-80’ tall with rounded open crown. Leaves are 3-7” long with shiny green above and pale yellow below, 7 (rarely 9) lobes, broadest towards tip, each ending with a few bristle tipped teeth. Bark is dark grey, smooth, becoming blackish, thick, rough, furrowed into scaly ridges or plates, inner bark is reddish. Acorns ½-1” long, egg shaped, becoming brown with faint rings; 1/3-1/2 enclosed by thick deep cup of tightly pressed scales.

**Shortleaf Pine**  
*Pinus echinata*
Habitat: Dry to damp, mixed forests  
Identification: height 70-100’ tall with broad open crown. Needles are 2 3/4-4 1/2" long in bundles of three, sometimes 2. Bark is reddish-brown with large irregular flat scaly plates. Cones are 1 1/2-2 1/2" long, conical or narrowly egg-shaped, dull brown, short stalked, small prickle on scales, opening at maturity but remain attached.

*Sweet bay  
Magnolia virginiana

Habitat: Damp to wet, swamps and wetlands  
Flowers: June-September  
Identification: Height 20-60’ with narrow rounded crown. Leaves 3-6” long, 1 ¼-2 ½” wide, oblong, blunt at tip with shiny green above and whitish below; turn brown in fall. Bark is smooth, gray, and aromatic. Flowers 2-2 ½” wide, cup shaped, with 9-12 white fragrant petals.

*Red Maple  
Acer rubrum

Habitat: Wetlands, hardwood swamps  
Identification: Height up to 60-90’ with narrow or rounded crown. Untrained plants often sprout multiple trunks, becoming a large shrub. Leaves 2 ½-4” long and as wide, broadly ovate with 3 shallow lobes, sometimes two small lobes at base, irregular wavy saw-toothed on edges, dull green above with paler green below; turn red, orange, and yellow in fall. Keys ¾-1” long, pared, green turning red to reddish-brown in fall.

Shrubs

*Highbush Blueberry  
Vaccinium corymbosum

Habitat: Damp to wet.  
Flowers: June-August
Identification: Height 5-15’, multi stemmed shrub with green, or often red twigs. Leaves 1 ½-3” long, elliptical; turn bronze or red in fall. Terminal clusters of small urn shaped white flowers. Berries ½” diameter, blue with dusted whitish look.

*Inkberry/Gallberry
**Ilex glabra**

Habitat: Moist to dry.
Identification: Height 6-12’ with mound shaped crown and short lower branching trunk. Leaves 2” long, evergreen, lance shaped, sparingly toothed, glossy, leathery; turn brown to black in fall. Bark is smooth and dark gray. Berries are tiny, blueish purple, grow in rows along leaf axils. Berries purple-black, persist into winter. Only member of the holly family without spines on the leaves.

*Lowbush Blueberry
**Vaccinium angustifolium**

Habitat: Open, sandy, damp to wet
Flowers: Identification: Height 6-24” tall, multiple stems, scraggly branches. Leaves are broad elliptical and shiny; red-green in spring, blue-green in late summer, and maroon-purple in fall, ½-2” long. Flowers are white bell shaped, >1/4”. Berries ½” diameter, blue with dusted whitish look.

*Mountain Laurel
**Kalmia latifolia**

Habitat: Dry or moist acidic soils, understory of mixed forests
Flowers: May-June
Identification: Height 10-20’ thicket forming shrub or small tree with crooked trunk. Leaves 2 ½-4” long, 1-1 ½” wide, evergreen; alternate,
opposite, or in threes along twigs, crowded at tips, elliptical, stiff. Bark is dark reddish-brown, thin, shredding. Flowers ¾-1” wide saucer shaped, white or pink with purple lines in upright clusters; stamens pop out when touched.

Northern Bayberry
*Morella pensylvanica*

Habitat: Dry to wet.
Identification: Height 1 ½-6’ tall, dense rounded shrub. Leaves up to 4” long, slightly toothed near tip, narrow at stem, fragrant; turn bronze in fall. Berries 1/8” diameter, round grayish-white wax covered, growing in clusters from stem below leaves.

*Sheep Laurel
*Kalmia angustifolia*

Habitat: Dry to moist.

Flower: May-August
Identification: Height 1-3’, rounded evergreen shrub. Leaves 1 ½-2” long in whorls of 3, dark green above with paler green below, lower leaves hang down. Bark is smooth and brown. Flowers are ½” diameter, deep pink saucer shaped in round clusters, stamens pop out when touched.

Sweet Pepperbush
*Clethra alnifolia*

Habitat: Mostly damp, sometimes dry woods and edges.
Flowers: Late July-September
Identification: Height 3-10’, many branched leafy shrub. Leaves up to 3” long, wedge shaped, sharply toothed above middle, un-toothed at base, blunt or broadly pointed at tip. Stems are smooth, flaky gray-brown. Flowers are 1/3” diameter, white, with 5 petals, 10 long stamens; in 8” upright spikes, powerfully scented.
Wintergreen
*Gaultheria procumbens*

Habitat: sandy woods
Flowers April-May
Identification: Height up to 6” tall. Leaves 1-1 ½” long, green, singly or in groups of 2-3, leathery, evergreen, may turn reddish in fall. Leaves, when broken, smell like mint. Berries are 1/4-3/8” in diameter. Flowers are white, 5 lobed bells.

Ferns
*Northeast Bracken
Pteridium aquilinum*

Habitat: Uplands. Dry, open woods, open fields, and borders of wetlands.
Identification: Height 3’. Fronds divided in 3, triangular in outline, smooth or finely hairy near the base. Fronds have bipinnate leaflets with many pinnate sub leaflets. Sori are dots on curled under leaflets.

Moss, and Lichens

*British Soldier Lichen
Cladonia cristatella.*

Habitat: damp to wet, Decaying wood, soil, mossy logs, tree bases, and stumps
Identification: Pale green stem with red, spore bearing cap. The red cap is spore producing and may not always be present as the lichen does not produce spores until 4 years of age. Similar Species: Lipstick Lichen. Both lichens have pale green stem with red cap. However, the caps of lipstick lichen rarely branch and look more like Powderhorn lichen with a red tip.

FRAGILE: Grows 2 mm a year
*Broom Moss

*Dicranum scoparium*

Habitat: On soil in open areas and forest clearings
Identification: densely tufted cushiony moss, long narrow leaves growing asymmetrically, Leaves are falcate and all swept to one side of the stem.

*Cladina Lichen (Reindeer Lichen)

*Cladonia arbuscula*

Habitat: Dry to wet, many soil types
Identification: 1 1/2-4 1/2" tall, Mat forming, grows upright, branching, tips of lichen split into three.

FRAGILE: Grows 3-5 mm a year

*Common Greenshield Lichen

*Flavoparmelia caperata*

Habitat: Inner trunk and branches of deciduous trees, in sunlight
Identification: Somewhat leaf-like, composed of lobes, unattached to their substrate (what they grow on) at their edges.

*Common Powderhorn Lichen

*Cladonia coniocraea*

Habitat: On rotting wood and tree bases, rarely on bare soil
Identification: ¼-1 ¾” tall grey-green, unbranched or sparingly branched podetia. Occasionally have small cups at the tip similar to pixie cup lichen however cups have a smaller diameter.
*Cup Lichen
*Cladonia cervicornis subsp. Verticillata

Habitat: Mosses, rotting wood, tree bases, rarely on bare soil
Identification: ½-2” tall grey-green podetia, cup bearing with finger-like protrusions surrounding the edges of the cups, 1 to 3 tiers of cups along podetia.

*Feather Moss
*Hypnum imponens

Habitat: Forms dense mats on logs, at the base of trees, and also on thin soil over acidic rocks
Identification: Yellow green mat forming moss, individual reddish-brown stems have a feather or frond like appearance. Shoots typically 1-1 ¼” long.

*Pin cushion Moss
*Leucobryum glaucum

Habitat: Damp shady soil or at the base of trees, logs, or rock ledges
Identification: Forms thick cushion 1-3” thick, white to dark green depending on moisture level, often ball shaped, can spread creating mats up to 3’ wide.

*Pixie Cup Lichen (Trumpet Lichen)
*Cladonia asahinae

Habitat: On rotting wood and tree bases, rarely on bare soil
Identification: ½-2” tall green-gray podetia with 1/8-1/4” wide cups at tip, blunt to fingerlike protrusions along margins of cup, infrequently bearing 2 to 3 tiers of cups along center of podetia.
*Slender Starburst Moss
*Atrichum angustatum

Habitat: Dry and wet soil, tree roots, and rocks
Identification: When moss is wet, green lanceolate leaves extend out from center resembling a star.

*Sphagnum moss (peat)
*Sphagnum magellanicum

Habitat: Wet; swamps, bogs, ponds, streams, sometimes floating.
Identification: Yellow-green to red mats of long spongy stalks with thick, whorled branches covered with tiny scale like leaves.

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**Herbaceous**

Frostweed: *Helianthemum canadense*

Flower: Late May to July.
Habitat: Dry, open, well drained sand.
Identification: Height 8”-18”. Flowers 1” wide, yellow, 5 petals atop main stem; later in season clusters of inconspicuous, bud like flowers without petals in leaf axils. Grows only in the sunlight. Flower lasts only 1 day.

Pine Barren Gentian
*Gentiana autumnalis*

Flower: Early September to mid-October.
Habitat: Moist, open, sandy areas, roadsides, pitch pine lowlands, stream banks, in the Pine Barrens.
Identification: Height 12”-18”. Flowers 1”-2” wide, blue-purple, deep lighter pestil, 5 petals.

Showy Aster
Aster spectabilis

Flower: Late July to late September.
Habitat: Dry, sandy.
Identification: Height 12”-18”. Flowers 1”-2” wide, purple ray florets (petals) on yellow disk floret.

Thread-leaf Sundew
Drosera filiformis

Flower: Late June to late August.
Habitat: Wetlands
Identification: Height 3”-12”. Flowers ½” wide, pale pink-lavender 5 petaled on leafless stalk. Carnivorous, catches prey on sticky red hairs lining its stem.

Turk’s-cap Lily
Lilium superbum

Flower: Late June to August.
Habitat: Wetlands
Identification: Height 3’-7’ tall. Flowers typically 3-7 blooms per stalk, but can have up to 40. Flowers nod on stalk, 6 Petals, curl upwards, color varies from yellow-orange to deep reddish-orange with darker spots, 6 long stamen with wide pollenous anther.

Wild Lupine
Lupinus perennis
Flower: Early May to early June.  
Habitat: Dry, open woods, clearings and openings. 
Identification: Height 8”-24”. Flower cluster elongated on stem, blue-purple, 1/2” wide. 7-11 leaves, ½-2 ½” in length, palmately compound, occurring at tips of stems.

**Orchids**

**Crested Yellow Orchid**  
*Platanthera cristata*  

Flower: Late June to early September.  
Habitat: Wetlands. Damp, open boggy areas, woods, cedar swamps, roadsides. 
Identification: Height 2.5’. Flowers yellow, 3/8” wide, elongated along stem, bottom lip fringed, lateral sepals spreading.

**Grass Pink**  
*Calopogon tuberosus*  

Flower: Mid-June to late July.  
Habitat: Wetlands. 
Identification: Height 6-20”. Flowers white or pink to purple, elongated along stem, up to 1” wide, lateral sepals spreading, bottom sepal lobed.

**Little Ladies’-tresses**  
*Spiranthes tuberosa*  

Flower: Early July to mid-September.  
Habitat: Dry, sandy fields, openings or edges of woods, sometimes in turf. 
Identification: Height up to 1’. Flowers elongated spiral around stem, pure white, width > ¼”, tubular, lateral sepals slightly spreading; petals linear to lance-oblong.
Flora

Nodding Ladies’-tresses
*Spiranthes cernua

Flower: Late August to mid-October. 
Habitat: Open, moist. 
Identification: Height 6-24”. Flower elongated spiral along stem, white to ivory, occasionally green, nodding only at perianth, lateral sepals appressed to spreading, petals linear to lance-oblong.

Pink Ladies’-slipper
*Cypripedium acaule

Flower: Early May to July. 
Habitat: Damp or dry, acid soil. 
Identification: Height up to 24”. Flower solitary, pink to white, labellum has pouch like shape.

Rose Pogonia
*Pogonia ophioglossoides

Flower: Early May to late July. 
Habitat: Wetlands. 
Identification: Height: 3-24”. Flowers solitary or 2-flowered raceme, pink or rarely white or bluish, gaping, sepals oblong or oblong-elliptic; bottom lip fringed, darker in color.

Vines

*Glaucus-leaved Greenbriar
*Smilax glauca

Habitat: moist to dry 
Identification: Climbing, branching, Leaves deciduous to semi evergreen, evenly disposed, often blotchy, cylindrical or slightly tapering, without substantial furrows or ridges; Prickles >¼”. Berries blue to black, ¼” diameter, shiny black at maturity.
*Large Cranberry
*Vaccinium macrocarpon*

Habitat: Moist to wet, bogs, grows
Flower: May-July
Identification: 4-8” tall, leaves simple 1/4-3/8” long, alternate, green turning maroon-purple in fall. Flowers ½” long, pale pink to white, petals reflex (curl back) towards stem. Berries larger than ½” in diameter. Often grows in sphagnum moss
Poisonous Plants at Halgas

The poisonous plants located within Halgas Scout Reservation are commonly found elsewhere in the region. The potentially lethal varieties are only dangerous when ingested. Scouts and Scouters should avoid foraging for food unless they have received training in the identification of edible species. The non-lethal poisonous plants produce skin irritations which may or may not require medical attention beyond that available through on site first aid, depending on the reaction and area of the body affected.

*Scouts and Scouters should not assume that mushrooms other than the Fly Agaric found at Halgas are edible solely because they are not listed here as poisonous.*

American Holly

*Ilex opaca*

See *native plants* section for identification information.

Hazard: The Bark, leaves, and fruit contain cynogenic glycosides (Hydrogen Cyanide) and the fruit contains ilex lactone. Both of these toxins vary in potency throughout the seasons and maturity level of the plant. Symptoms of ingestion typically include nausea, vomiting, abdominal pain, and diarrhea. Although the plant has a low toxicity, ingestion of the berries by young children or in large amounts by fully grown persons can cause death.

Treatment: If ingested in large quantities or by a young child, seek medical treatment immediately. Activated charcoal may be used to absorb toxins. Treatment of symptoms will reduce discomfort.

Fly Agaric:

*Amanita muscaria*

Large white-gilled, white-spotted, usually red mushroom. The cap
changes from globose to hemispherical, and finally to plate-like and flat in mature specimens. Fully grown, the bright red cap is usually around 8–20 cm (3–8 in) in diameter, although larger specimens have been found. The red color may fade after rain and in older mushrooms.

Hazard: Poisonous properties are due to the presence of an alkaloid called muscarine. Ingestion of the fungi initially results in the subject showing signs of agitation, irritability, confusion, experiencing hallucinations after 30-90 minutes. The central nervous system will begin shutting down after approximately 3 hours. In severe poisonings, seizures and coma may occur. Lethal dose for the average adult has been calculated as 15 mushrooms.

Treatment: Seek medical attention immediately. Activated charcoal may be used if treatment is given within 4 hours of ingestion, atropine injection will counteract muscaria’s effect on the heart.

*Inkberry/Gallberry
*Ilex glabra*

See native plants section for identification information.

Hazard: Berries are the most toxic part of the plant however leaves and bark also contain toxins. A member of the *Ilex* (Holy) Family, this plant contains the same toxins as the American Holly. See American Holly for Toxicity, Symptoms, and treatment.

Inkberry leaves contain theobromine, a caffeine like chemical also present in cocoa beans. Due to this chemical presence, Native Americans and early settlers through the late 1800 would steep the leaves as a tea giving the plant an additional name of Appalachian tea.

*Scouts should not attempt to make tea with this plant!!!*
*Mountain Laurel:  
*Kalmia latifolia*

See native plants section for identification information.

Hazard: All green plant components, as well as the flowers, twigs and pollen, are poisonous if ingested. Plant produces andromedotoxin (also called grayanotoxin), similar to turpentine. Foraging wildlife and livestock are the typical animals affected. Consuming 0.2% of body weight (8 oz. for average adult male) in leaves can result in symptoms or death. Within 6 hours of ingestion, subject displays increased salivation, followed by vomiting, diarrhea, muscular weakness, and impaired vision followed by slowed heart rate, cardiac arrhythmias, low blood pressure, mild paralysis, and convulsions. The cardiovascular effects are the cause of most lethal cases.

The most common cause of human poisoning is the result of consuming “Mad Honey”, or honey made from pollen of the Mountain Laurel, in excess. Mad Honey has a bitter taste, which usually discourages the consumer. Individuals should avoid purchasing “local honey” from areas boasting a plethora of Mountain Laurel.

Treatment: Seek medical attention immediately if plant is directly consumed. Exposure to “Mad Honey” often does not require medical attention unless exposure was significant. Atropine injection will counteract the cardiac effects of the toxin; other medication to reduce blood pressure may be used to mitigate other symptoms.

All plant species within the genus Rhododendron are known to contain andromedotoxin to include Swamp Azalea (*Rhododendron viscosum*). See right:

Pink Ladies’-slipper  
*Cypripedium acaule*

See native plants section for identification information.
Hazard: Two chemical present on the glandular hairs located on the stem and petals of the plant, quinone and cypripedin cause a skin rash to develop in some people similar to that of poison ivy. Quinone is also an eye irritant causing inflammation of the cornea.

Treatment: Typically, exposure is caused by handling the flower, followed by physical transfer of oils to eyes through contact with hands. Following exposure to skin, wash affected area thoroughly with oil dispersing soap. Irrigate eyes with water if oils have been transferred to the eye area; seek medical treatment if eyes become irritated. Seek medical treatment if you develop trouble breathing, swelling of the face, mouth, neck, or genitalia, or widespread oozing blisters.

Poison Ivy: Toxicodendron radicans

Leaf, green to reddish, three lobed with the middle leaflet on a short petiole and lobed on both edges, 2 lateral leaflets are lobed on outside edge. Flower is hidden under leaves, green in color. Fruit is a small, white berry growing in clusters. Aerial rootlets fasten it to trees, telephone poles, and other structures. Can grow as an upright plant. A single stem comes up from the underground stem.

Hazard: Plant produces sticky oil called urushiol (yoo-ROO-shee-all). Contact with any part of the plant living or dead, during any season, or contact with clothing, equipment, pets, etc. causing transfer of oil results in itchy blister forming rash in most people usually lasting two weeks but can persist up to six.

Treatment: Treat symptoms. Seek medical treatment if you develop
trouble breathing, swelling of the face, mouth, neck, or genitalia, or widespread oozing blisters.

Poison Sumac:  
*Toxicodendron vernix*

Leaf is green to reddish, 7-9 leaflets with the central leaflet on a short petiole. Flower is green. Fruit is white. Found only in very wet ground.

Hazard: Plant contains same chemical compound as Poison Ivy. See Hazard and Treatment sections for Poison Ivy.

*The sumacs with large red flowers and fruits are non-poisonous.*

Sheep Laurel  
*Kalmia angustifolia*

See native plants section for identification information.

Hazard: A member of the Rhododendron genus, see Mountain Laurel for toxicity, symptoms, and Treatment.

Stinging Nettle:  
*Urtica dioica*

3’-7’ tall stalk with 1”-3” long toothed leaves growing opposite on wiry green stem. Flowers are greenish-brownish, forming on auxiliary stems. Plants form dense clonal patches. Leaves, stems, and flowers are sparsely to moderately covered with stinging hairs.

Hazard: Hollow stinging hairs act as hypodermic needles, injecting
histamine, formic acid, and acetylcholine when triggered by contact.
Treatment: An oral antihistamine or cream will reduce pain and itching from the histamine.

Wild Lupine
*Lupinus perennis*

See *native plants* section for identification information.

Hazard: seeds contain lupinine, sparteine, hydroxylupanine, and anagyrine (harmful to developing fetuses causing deformities). Toxic when ingested in large quantity. These toxins are the same as are present in the Lupini beans, eaten in the Mediterranean following a lengthy two to three week detoxification bath. Symptoms include dilated unresponsive pupils, flushed face, confusion, disorientation, slowed thought, dizziness, sleepiness, anxiety, difficulty with or slurred speech, fever, burning dry mouth, stomach pain, respiratory depression, slowed heart rate, convulsions and/or tremors.

Studies have shown a cross-allergenicity with peanuts. Persons allergic to peanuts should avoid contact with the plant as it can result in life threatening anaphylaxis. Treatment: persons presenting with the described symptoms or what is called Anticholinergic Toxicity should seek medical treatment immediately. Treatment includes the detoxification of the GI tract through use of activated charcoal. In some cases which are life threatening, the antidote physostigmine salicylate is used to reverse the toxins effect on the central nervous system.
The Pinelands cover over 1.1 million acres of Central and southern New Jersey. The unique patchwork of different ecosystems supports valuable ecological, economic, and recreational opportunities. The Pinelands also provide critical resources to the rare, threatened, and endangered species that make the Pinelands their home.

Surpassed only by habitat destruction, invasive species pose the second largest threat to this fragile ecosystem. Once introduced, invasive plants, animals, insects, and pathogens outcompete native plants and animals for important habitat and nutrients. Invasive commonly possess growth, reproductive, and/or survival traits providing them an edge over natural species in the ecosystem. A compounding factor is that many invasive species do not have natural predators in the areas they are introduced to keep their population growth in check.

An invasive is defined as a non-native species that has been introduced to an area outside its natural range through human activities resulting in large population growth having negative impacts on the natural or agricultural systems it was introduced to. As of 2009, there were 1125 non-native species identified in New Jersey, 136 of which have been labeled as invasive.

**Invasive species pose the second largest threat to this fragile ecosystem**

Invasive plants cause severe impacts to forests that normally contain a variety of native shrubs and woodland wildflowers under a canopy of tall trees. Garlic Mustard, Japanese Siltgrass, and Japanese Barberry typically take over the understory of a forest, eliminating all other flora. Multiflora Rose and Autumn Olive take over shrub lands and fields that would otherwise become healthy forested area. Asiatic Bittersweet and Japanese Honeysuckle strangle young trees, preventing them from maturing and killing off entire generations of future forest.

The destruction of the land’s biodiversity has direct impact for humans. The natural resources we rely on for food, and water are impacted as well. A healthy forest has the ability to filter clean drinking water
through the many different species of plants. The monetary cost to control invasive species to support agriculture and forestry industry was over 120 billion per year in 2005. New Jersey agriculture estimated losses of over $290 million in 2009. That represents 33% of New Jersey's total annual cash crop receipts.

The most problematic Invasive plants in New Jersey are Purple Loosestrife, Mile-a-minute, Multiflora Rose, Japanese Barberry, Japanese Stiltgrass, Garlic Mustard, Asiatic Bittersweet, Tree-of-Heaven, Autumn Olive, Japanese Honeysuckle and Eurasian Water-Milfoil.

Invasive marine species include the Asian Shore Crab, MSX Oyster Disease and Dermo, European Green Crab and the Common Periwinkle.

Invasive insects such as the Hemlock Wooly Adelgid and Gypsy Moth along with pathogens such as Chestnut Blight, Dutch Elm Disease, Dogwood Anthracnose, Beech Bark Disease, and Butternut Canker have caused irreparable damage to New Jersey Forest. Close to 90% of all hemlock trees in New Jersey have been infested by the Hemlock Wooly Adelgid. Entire stands of hemlock in Northern New Jersey have been destroyed due to this invasive insect.

One of New Jersey’s most notorious forest pests, the European Gypsy Moth, was brought to Massachusetts in 1869 as a potential source of silk. It then escaped into the environment and has spread as far south as South Carolina and west to Wisconsin causing the large scale defoliation and eventual death of trees ever since. Outbreaks typically take over a decade to control. The use of Gypsy Moths as a source of silk was never actualized but the United States is plagued with the invasive regardless.

Other sources of intentional introduction of an invasive species include: the European Starling as part of an effort to establish all animals mentioned in plays written by William Shakespeare; Japanese barberry as an ornamental plant for landscaping; and Garlic Mustard was planted for use in food and for medicinal uses.

Unintentional or accidental introductions include: Japanese stiltgrass through packing material for delicate china; Asian Longhorned beetle through the use of untreated wood packing material, and Sudden oak death arrived contained within a shipment of contaminated nursery stock.

Within New Jersey, the Pinelands are the least susceptible area to invasive species. Invasive plants found elsewhere in New Jersey may be present within disturbed areas of the Pinelands but are not widespread. This is thought to be because of the lack of soil moisture and nutrients. Invasive plants in the Pinelands are
generally restricted to the highly disturbed and developed areas such as roadsides, the edges of cranberry bogs, and in developed neighborhoods and towns.

Chinese Bush Clover and Phragmites are the two invasive plants which are the greatest concern. Chinese Bush Clover outcompetes many rare flowering herbs along roadsides. Phragmites establishes itself within disturbed areas but has the potential to migrate into undisturbed wetlands. African Lovegrass and Silvergrass are two species that are beginning to establish themselves within the pinelands.

Outdoor Recreationists in New Jersey enjoy a wide variety of activities from hiking, fishing, and hunting to bird watching, botanizing, and photography. This group not only represents a diverse group of potential volunteers for the identification and removal of invasive species, but also pose one of the greatest threats for spreading invasives.

Equipment, clothing, vehicles, watercraft, and pack stock, and firewood are often the dispersal agents for invasive species to be transported from one recreation area to another. Seeds often become embedded in mud that sticks to footwear and tires. Bait buckets and other aquatic gear can transport fragments of aquatic plants or small marine animals which can be transferred to areas that have not been impacted yet.

Consider the following guidelines to help prevent the spread of invasive species and to protect the biologically diverse environment you enjoy:

**On Land**
- Learn to identify invasive species in the area you will be going before your trip
- Know who the land managers are and how to report Invasive species sightings.
- Report rather than remove small infestations as you may
inadvertently help them spread through seed and root dispersal.

- Stay on designated trails/roads to avoid collecting seeds on your clothing, gear, and vehicle
- Avoid camping in areas with existing outbreaks
- Feed pack stock certified weed-free forage ahead of time as seeds remain viable after digestion
- Check Clothing, boots, pets, equipment for weed seeds
- Clean off boots and gear as best you can prior to leaving the site
- When cleaning equipment at home, do not throw waste into the yard, use the garbage
- Ensure your tent is swept out to prevent transfer of seeds from site to site. Cleaning gear once arrived at a new site is too late
- Know the regulations for transportation of firewood to and from recreation areas to prevent insect and pathogen disbursal

**Watercraft**

Guidelines from Stop Aquatic Hitchhikers!

**Clean**

- Inspect and clean off plants, animals, and mud from gear and equipment including waders, footwear, ropes, anchors, bait traps, dip nets, downrigger cables, fishing lines, and field gear before leaving water access.
- Scrub any visible material on footwear with a stiff brush.

- Anglers using boats should refer to boat inspection and decontamination guidelines.

**Drain**

- Drain water from boat, motor, bilge, bladder tanks, live-well and portable bait containers away from ramp.
- When keeping live bait, drain bait container and replace it with spring or dechlorinated tap water. Don’t add other live fish or water to the bait container.

**Dry**

- Dry everything at least five days, unless otherwise required by local or state laws, when moving between waters to kill small species not easily seen OR wipe with a towel before reuse.

**Other**

- Use non-felt soled boots instead of felt-soled footwear to further reduce the risk of spreading AIS.
- Dispose of unwanted bait, fish parts, worms, and packing materials, in the trash; do not dump them in the water or on land.

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**WHAT IS AT RISK?**

The cost of invasive species in New Jersey is nearly $300,000,000 annually!
The following pages contain species descriptions for the invasive species of concern in the Haltgas and Pinelands area. Phragmites Atralis (Common Reed) has not been included. Proper identification of this species of reed is near impossible without genetic testing.

More information on New Jersey’s Invasive Species can be found on the New Jersey Invasive Species Strike Team (NJISST) website: http://www.njisst.org/NRCSGrant.htm
Chinese Bush Clover (Lespedeza cuneata)

Also called: S丽江 lespedeza
Family name: Pea (Fabaceae)
Native range: Eastern Asia
NJ Status: Emerging Stage 3 - Common (may be regionally abundant). It is highly threatening to natural communities. All newly detected occurrences should be eradicated.

General description:
- Upright semi-woody perennial herb from 3'-6'
- Single to many stemmed
- Extensive root system

Fruit:
- Small, oval, yellow to reddish brown
- Maturing late summer-fall

Habitat:
- Open woodlands, roadsides, fields, meadows, wetlands, Pine Barrens
- Planted for erosion control, mine reclamation, wildlife habitat

Commercial availability: Yes

Look-alikes:
Numerous species of native and non-native bush clovers (Lespedeza spp.) are found in NJ. Some species differ from Lespedeza cuneata in habit, flower arrangement and leaf shape.

Slender bush clover (Lespedeza virginica)
- Native, occasional in dry fields, rocky banks and serpentine barrens
- 1 - 3.5' tall
- Few branches
- Leaves 0.4" - 1.4" long, lacking bristle tip
- Flowers purple in dense clusters in upper leaf axils
- Blooms August-September

Narrow-leaved bush clover (Lespedeza angustifolia)
- Native, rare in moist, open sandy soils
- 1.5'-4' tall
- Flowers yellowish, in dense clusters
- Leaves 1" - 2.5" long
- Leaflets very narrow, lacking bristle tip
Invasive Species

NEW JERSEY INVASIVE SPECIES STRIKE TEAM

Weeping lovegrass (*Eragrostis curvula*)

Family name: Poa (Poaceae)

Native range: Southern Africa

NJ Status: Emerging Stage 2 - Uncommon (may be regionally common). It is highly threatening to natural plant communities. All detected occurrences should be eradicated.

General description:
- Warm-season, perennial grass, 1'-4' tall
- Clumping habit
- Not rhizomatous
- Does not spread from nodes

Leaves:
- Typically reclining rather than upright
- Arched, flat, narrow, 0.1" wide
- Grey-green
- Ligule (tongue-like organ located at leaf/stem junction) with long hairs
- Fringed sheath (leaf base surrounding stem)

Habitat:
- Roadsides, meadows, Pine Barrens, landscaping
- Planted as an ornamental and for erosion control

Commercial availability: Yes

Look-alikes:
Frank's love grass (*Eragrostis franka*)
- Rare (NJ Natural Heritage Database), native annual grass of moist stream banks
- 4'-12' tall
- Blooms September
- Typically erect

Purple love grass
(*Eragrostis spectabilis*)
- Native, perennial grass of sandy fields and roadsides
- 1'-3' tall
- Blooms June-October
- Seedhead is bright purple until maturity, then breaking off easily

Flowers:
- Diffuse, not showy
- Nodding, small, 0.2'-0.4" long, 0.1" wide and gray-green
- Blooms late summer-early fall

Fruit:
- Small, yellow seeds

Chinese fountain grass

Chinese fountain grass (*Pennisetum alopecuroides*)
- Ornamental, non-native, perennial grass
- Up to 3' tall
- Blooms dense, in September
- Typically erect
Chinese silvergrass (*Miscanthus sinensis*)

**Family name:** Grass (Poaceae)

**Native range:** Asia

**NJ Status:** Emerging Stage 2 – Uncommon (may be regionally common or abundant). It is highly threatening to natural communities. Eradicate all detected occurrences.

**General description:**
- Tall, clump-forming, perennial grass
- 6.5’-10’ tall
- Spreads by seed and strong root system
- Widely planted as an ornamental
- Variable – over 50 cultivars available

**Leaves:**
- Long, thin, 3’-6’ long sharply pointed tips
- Leaf edges very rough
- Stiff, upright, with tips sometimes curving down
- Often with a silvery white midrib
- Cultivars can vary in leaf color
- Leaves dry and persist through winter

**Flowers:**
- Showy, silvery to pale pink flowers (panicles)
- Fan-shaped, multiple spikes make up each head
- Individual flowers 2.75’-3.5’ wide
- Blooms late September- November

**Fruit:**
- Small with a twisted, bristled tip
- Ripening in September-October
- Persisting through winter

**Habitat:**
- Forest edge, meadow, coastal areas, roadside, garden, landscaping
- Tolerates extremes in soil moisture, from dry to moist

**Commercial availability:** Yes

**Look-alikes:**
- Eastern gamagrass (*Tripsacum dactyloides*)
  - Large, clumping native grass to 10’ or taller
  - Not showy, 1-4 flowering spikes, 4”-9” long
  - Seeds large, chunky, like corn kernels
  - White midrib
  - Swamps, meadows, wet shores
References:

Books/Journals/Pamphlets:

Reports:
Published hard copy or online

Websites:
Maps/Imagery:

“Halgas Scout Reservation.” 39°46'41.59"N 74°23'51.03"W. Google Earth. September 6, 2013, December 10, 2014


Images:
Artwork, Digital Images, and Photographs


Foliose Lichen. Tree dwelling lichens, Rutgers New Jersey Agricultural Experiment Station. Web. 11 Jan. 2015 <http://njaes.rutgers.edu/pubs/fs1205/>


“Examine each question in terms of what is ethically and aesthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise”.

—Aldo Leopold
Conservation, A Sand County Almanac

“If the land mechanism as a whole is good then every part is good, whether we understand it or not...To keep every cog and wheel is the first precaution of intelligent tinkering”.

—Aldo Leopold
Conservation, A Sand County Almanac
The Scout Basic Essentials
Pocket Knife
First Aid Kit
Extra Clothing
Rain Gear
Water Bottle
Flashlight
Trail Food
Matches and Fire Starter
Sun Protection
Map and Compass